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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/749,751	12/30/2003	Kurt Ulmer	200309235-1	9068

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FORT COLLINS, CO 80527-2400

EXAMINER

MARTIN, ANGELA J

ART UNIT	PAPER NUMBER
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1745

MAIL DATE	DELIVERY MODE
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08/09/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/749,751

Applicant(s)

ULMER ET AL.

Examiner

Angela J. Martin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 May 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-8 and 14-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4-8, 14-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office Action is responsive to the Amendment filed on May 22, 2007. The Applicant has amended the Specification and has amended claims 1, 14; and has canceled claims 3, 9-13, 19-40. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action because the dependencies on the independent claim now include an apparatus comprising a heater. Accordingly, this action is made final.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, 4-8, 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over C. Berger, U.S. Pat. No. 3,546,020, in view of Kendall, U.S. Pat. No. 5,827,620.

Rejection of claims 1, 2, 4-8, 15-18 drawn to an apparatus.

Berger teaches an apparatus, comprising: a fuel cell; and an oxygen supply, operably connected to the fuel cell, including an inorganic oxygen containing salt (col. 8, lines 34-40) that decomposes into oxygen and a non-volatile salt. An apparatus as

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claimed in claim 1, wherein the inorganic oxygen containing salt comprises a metal chlorate (col. 8, lines 34-40) that decomposes into oxygen and a metal chloride. It teaches a fuel supply connected to fuel cell (col. 1, lines 19-27; col. 2, lines 38-47). An apparatus as claimed in claim 6, further comprising: a housing defining an interior, in which the fuel cell, fuel supply and oxygen supply are located, and an exterior; and first and second electrical contacts, operably connected to the fuel cell, associated with the exterior of the housing (col. 5, lines 55-74).

Berger does not teach a heater; the fuel cell is a solid oxide fuel cell.

Kendall teaches an apparatus as claimed in claim 1, wherein the fuel cell comprises a solid oxide fuel cell (abstract). An apparatus as claimed in claim 1, further comprising: a heater (col. 3, lines 64-67 and col. 4, lines 1-2) in thermal communication with the inorganic containing salt. An apparatus as claimed in claim 6, further comprising: a housing in which the fuel cell, fuel supply and oxygen supply are a waste products storage device, operably connected to the fuel cell, located within the housing (col. 6, lines 64-67 and col. 7, lines 1-7). An apparatus as claimed in claim 14, wherein the fuel cell comprises a solid oxide fuel cell (abstract).

Thus, one of ordinary skill in the art at the time the invention was made would have inserted the teachings of Kendall into the teachings of Berger because Berger did not disclose the type of fuel cell employed, while Kendall gives the specifics of a solid oxide fuel cell and Berger teaches the advantage of employing a metal chlorate "which releases or generates the required oxygen." Additionally, although the prior art of record does not teach the decomposition of the salt into oxygen and a non-volatile salt,

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it does teach that the metal chlorate "releases...oxygen" which is one of the decomposition products of the metal chlorate; the other product would be metal chloride. Additionally, although it does not teach a "means, operably connected to the fuel cell, for decomposing an inorganic oxygen containing salt", the application does not disclose the means within the specification and is therefore not enabled. Although the prior art of record does not recite a solid form of the salt, it does not recite otherwise.

Response to Arguments

3. Applicant's arguments filed 5/22/07 have been fully considered but they are not persuasive. Applicant argues, "The cited references fail to teach or suggest the claimed combinations. For example, and referring to Figure 6, the Berger patent discloses a fuel cell 10 with a sealed oxygen chamber 57 that contains a metal chlorate. Oxygen is generated by exposing the metal chlorate to a catalyst, i.e. the platinum catalyst electrode 19. [Column 8, lines 26-48.] In contrast to the claimed combinations, there is no heater (or other structure) that heats the metal chlorate. The Kendall patent fails to remedy this deficiency. The Kendall patent discloses that ***air supplied by a blower fan or other inlet may be pre-heated*** on its way to a fuel cell. [Figure 4; column 3, line 64 to column 4, line 2; and column 7, lines 5-9.] Thus, even assuming for the sake of argument that there was some reason to combine their teachings, the Kendall patent would not have suggested heating the Berger metal chlorate. The Kendall patent teaches nothing more than pre-heating air that has already been obtained." However,

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the heater in Kendall would provide thermal energy to decompose the metal chlorate to produce oxygen.

Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angela J. Martin whose telephone number is 571-272-1288. The examiner can normally be reached on Monday-Friday from 9:00 am to 5:00 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



PATRICK JOSEPH RYAN
SUPERVISORY PATENT EXAMINER

AJM